U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
Division of Forest Insect Research

FOREST INSECT CONDITIONS CRYSTAL BAY, LAKE TAHOE TOIYABE NATIONAL FOREST RECONNAISSANCE SURVEY SEPTEMBER 1956

Introduction

A reconnaissance survey was conducted in the Crystal Bay, Lake Tahoe area of the Toiyabe National Forest on September 11, 1956, in conjunction with an annual fall inspection of insect conditions in northeastern California. The purpose of this survey was to determine the status of a bark-beetle infestation which has been epidemic in second-growth pine stands in the vicinity of Crystal Bay for the last 8 years.1/

An aggressive infestation of the mountain pine beetle in ponderosa pine in these stands was brought to the attention of Berkeley Forest Insect Laboratory (now the Division of Forest Insect Research) by the Supervisor of the Toiyabe National Forest in August 1950. Subsequent examinations indicated that the epidemic had started in 1949.

In 1953, the infestation was considered serious enough to warrant an appraisal. A 100 percent cruise was made, but the results were not reported because most of the infested area falls in one private ownership, and the owner has exhibited no interest in the situation nor any desire to carry on control work though he has been approached repeatedly on this matter.

Crystal Bay lies within the area serviced by the Intermountain Forest and Range Experiment Station. Since the outbreak was first reported, however, it has been kept under continued surveillance by the California Forest and Range Experiment Station through an informal agreement with the Intermountain Station. The California Station has serviced this isolated area of Region 4 in the past because it is homologous with Region 5 forest insect problems and timber stands. Moreover, because the infested timber is contiguous with uninfested timber in the California region proper, and thus may be a threat to the latter, the status of the outbreak is of importance in this Region.

Insect and Host Species

The principal host species is ponderosa pine ranging in diameter from 6 to 24 inches. This host is being attacked and killed by the mountain pine beetle,

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1/ R. C. Hall Forest Insect Conditions, Toiyabe N. F., Crystal Bay Area, May 1953, Reconnaissance Survey, Forest Insect Laboratory, Berkeley, Calif., May 18, 1953. 2 pp.

Dendroctonus monticolae Hopk., and the western pine beetle, Dendroctonus brevicomis Lec. In addition, there is scattered Jeffrey pine in the area, with the percent of Jeffrey pine in the stand increasing to pure type on the northeastern edge of the basin. To date no Jeffrey pine beetle, Dendroctonus jeffreyi Hopk., attack has been found. Several Jeffrey pine in the groups were top-killed, apparently by pine engravers, Ips sp., and many trees, both Jeffrey pine and ponderosa pine, were heavily attacked by Dendroctonus valens Lec. with brood in the larva, pupa, and adult stages. Washburn, 2/ who examined the area in April 1956, found what he thought to be the roundheaded pine beetle, Dendroctonus convexifrons Hopk., in the ponderosa pine. If this is confirmed it will be the first record for this area.

Status and Scope of Infestation

The infestation lies in a basin of approximately 4,000 acres on the northeastern edge of Lake Tahoe. From the original infested area of 100 acres, the outbreak has progressed to 1,000 acres of scattered, heavy group-loss at this time. Heavy broods of western pine beetle were found in the infestation for the first time. Two very large groups of faded trees near the main highway were examined and some 20 trees, still green at the time of examination, on the edge of these groups, were found to contain heavy western pine beetle broods in the larva, pupa, and young adult stages. In addition, fresh mountain pine beetle attacks were found.

To give an idea of the extent of the losses in 1953, a resume is included here of the 1953 appraisal survey, which has not previously been reported. The appraisal consisted of a 100 percent cruise of the two largest infested groups. The main group extended over 123 acres, while a much smaller group, designated group "R", covered 15 acres. A summary of data on losses in these two groups follows:

Infestation areas	Number of acres	Currently infested trees	Trees per acre	Abandoned trees	Trees per acre
Main Group	123	318	2.6	1,037	8.4
Group "R"	15	70	4.7	47	3.1
Total	138	388	3.6	1,084	7.8

In the estimation of the writer, who participated in the Crystal Bay survey of 1953, the infestation is increasing both in area and intensity. Now, instead of two large groups, there are scattered centers of loss throughout much of the basin, and activity continues around the two large groups. Some of the increase is, no doubt, due to the addition of the western pine beetle as one of the attacking species of insects. This beetle is legendary as a primary killer of ponderosa pine in the West.

2/ R. I. Washburn Forest Insect Conditions, Toiyabe N. F., Crystal Bay Area, April 1956. Intermountain Forest & Range Experiment Station. 2 pp.

Discussion

While the present infestation is localized, it is a potential threat to a large area of second-growth timber in a high-use recreational area on the Nevada side of Lake Tahoe, specifically Crystal Bay. Conceivably the infestation can become a threat to the trees on hundreds of summer home owners' lots in the area. In addition, the large groups of dead trees, some approaching the very edge of the lake now, are an eyesore and a fire hazard.

The exact acreage and number of infested trees involved cannot be ascertained until a thorough appraisal survey is made of the infestation. Such a survey should be conducted in the spring of 1957, as a joint undertaking by the Intermountain and the California Stations.

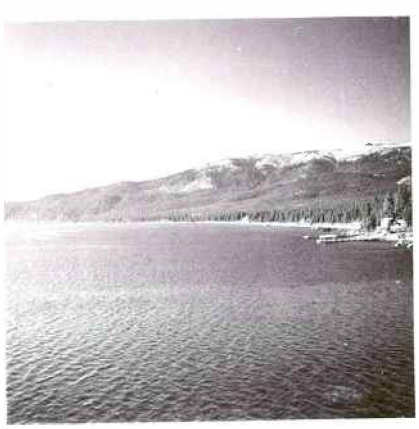
Summary

On September 11, a reconnaissance survey was made of the Crystal Bay mountain pine beetle infestation. The infestation was found to be increasing in acreage and intensity. In addition, heavy broods of western pine beetle were found in many green trees, indicating that this species has become an important factor in the outbreak. The 4,000-acre basin of second-growth ponderosa and Jeffrey pine can eventually be destroyed by insects with an extensive outbreak certain to occur if the proper conditions prevail.

Berkeley, California
January 8, 1957

Boyd E. Wickman
Entomologist

Group of ponderosa pine killed by mountain pine beetle and western pine beetle in 1955 and 1956. This large group is adjacent to Highway 28, Crystal Bay, Lake Tahoe.



Basin of ponderosa and Jeffrey pine, Crystal Bay, Lake Tahoe. Light spots in the timber are groups of ponderosa pine infested with mountain pine beetle and western pine beetle, September 1956.